Biotic Surveys and Inventories (BS&I)

Program Announcement

NSF 01-150

DIRECTORATE FOR BIOLOGICAL SCIENCES
DIVISION OF ENVIRONMENTAL BIOLOGY

FULL PROPOSAL DEADLINE(S) :

November 16, 2001 and first Friday in November annually thereafter

NATIONAL SCIENCE FOUNDATION

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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: Biotic Surveys and Inventories (BS&I)

Synopsis of Program: The Biotic Surveys and Inventories Program supports basic research and collecting activities that are designed to discover and document the biological species diversity of all forms of life on Earth. The Program supports collecting, identifying, vouchering, and naming the biota of a substantial geographic region, including oceanographic areas, as well as expeditionary work to discover and describe biotic diversity in poorly known areas. Knowledge of species-level biodiversity provides the foundation for research in systematic and population biology, ecology, conservation and restoration biology, anthropology, physical geography, biological oceanography, paleobiology and other sciences. This basic knowledge is necessary for monitoring and assessing land-use patterns, global climate change, and the economic value of natural resources. Research projects may address any major group or groups of organisms, from terrestrial, freshwater, and marine environments, usually at landscape to regional scales or larger. Permanent, well-curated collections or cultures and Internet-accessible databases of information are expected as products of BS&I support.

Cognizant Program Officer(s):

- Program Director, for Biotic Surveys and Inventories, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-8481.
- Program Officers, Systematic and Population Biology Cluster, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-8481.

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.074 --- Biological Sciences

ELIGIBILITY INFORMATION

- **Organization Limit:** None
- **PI Eligibility Limit:** None
- **Limit on Number of Proposals:** None

AWARD INFORMATION

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 20-25 grants awarded each year
- **Anticipated Funding Amount:** $5 million total anticipated

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Full Proposals:** Supplemental Preparation Guidelines
    - The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Deadline/Target Dates

- **Letters of Intent (*optional*):** None
- **Preliminary Proposals (*optional*):** None
- **Full Proposal Deadline Date(s):**

November 16, 2001 and first Friday in November annually thereafter

D. FastLane Requirements

- **FastLane Submission:** Required
- **FastLane Contact(s):**
    - Ms. Elaine Washington, FastLane Liaison, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-7193, e-mail: eputney@nsf.gov.
    - Questions can also be directed to, BIOFL@nsf.gov, Directorate for Biological Sciences, Room 695, telephone: 703-292-8406, e-mail: biofl@nsf.gov.

PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full program announcement/solicitation for further information.

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Additional award conditions apply. Please see the program announcement/solicitation for further information.

- **Reporting Requirements:** Additional reporting requirements apply. Please see the full program announcement/solicitation for further information.

I. INTRODUCTION

"We are at a critical juncture for the conservation and study of biodiversity; such an opportunity will never occur again. Understanding and maintaining that diversity is the key to humanity's continued prosperous and stable existence on Earth."
Loss of Biological Diversity: A Global Crisis Requiring International Solutions.
National Science Board, 1989

Increasing rates of extinction of species and the loss of knowledge of local species among indigenous peoples have created an urgent need for scientific exploration to expand humanity's knowledge of biological diversity throughout the world. In support of this goal, the Directorate for Biological Sciences, Division of Environmental Biology established the Biotic Surveys and Inventories Program in 1991. BS&I invites proposals to discover and document biological species diversity of all forms of life on Earth, with special emphasis on taxonomic groups of organisms that are poorly known, such as bacteria, archaea, protists, fungi, and invertebrates, and in geographic regions, including oceanographic areas, that are poorly surveyed.

Elements likely to be common to all BS&I projects include the following: (1) Collections -- natural history specimens, cultures, stocks or other physical samples are the material objects of discovery, study, and inventory. Methods of collection and curatorial arrangements for the care and vouchering of samples must be described. Proposals to collect and study organisms that have a minimal museum (or collection) tradition should indicate this fact, discuss the form that useful collections or cultures would take as well as their impact on future taxonomic practice in the group, and present plans for implementation and curation of such collections, stocks, or cultures. (2) Species inventories -- documentation of the number, taxonomic disposition, and, where appropriate, relative abundance of species encountered, and integration with prior knowledge of species occurrences in the region under study, are required. Such documentation may take several forms, depending on the current state of knowledge for the targeted taxonomic groups, but all projects should develop and begin implementation of plans for Internet-accessible products in interoperable formats, such as species checklists or catalogs, interactive keys or other expert identification systems, and taxon authority files. (3) Specimen databases -- the collections newly made during the course of the project, along with specimens or samples or cultures already in repositories, should be identified in web-accessible databases, for further use by scientists and others, with attention to locality or other geo-referencing data to facilitate mapping and GIS applications. (4) Education and Outreach -- field work to collect and identify organisms provides attractive training opportunities for students at all levels, and when conducted abroad, also presents opportunities for international collaboration with host country scientists and students. These students and colleagues should be partners in the research, conceptually and logistically, to the fullest extent possible.

II. PROGRAM DESCRIPTION

Biotic Surveys and Inventories proposals should address the following five topics in the Project Description section of the proposal, following the Results from Prior NSF Support section (if required).

1. Taxonomic Breadth. Proposals must specify the range of taxonomic groups to be sampled in the geographic region (or oceanographic area or stratigraphic horizon) under study, and must justify that breadth of sampling. Sampling a diversity of taxa is encouraged rather than a narrow group of closely related taxa; sampling of major ecological assemblages -- soil microorganisms, vertebrates and their parasites, vascular plants and their fungal endophytes -- should be considered where collecting methods achieve economies of return. Surveys of single species or genera are excluded from consideration, and surveys of single families will likely have low priority. Estimates of the numbers of new species, plans for the description of these new taxa, and electronic dissemination of information on the new collections, cultures, or samples should be provided. Collections or other resources currently available for the taxa of interest in the region under study should be described, with plans for incorporating information about these collections and taxa into the study. Summary information on existing collections for the targeted taxa in the region under study constitutes the preliminary data useful to reviewers in evaluating the need for additional collecting. Include an estimate of how complete the proposed survey or inventory is likely to be for the taxonomic groups under study in the region at the conclusion of the project, along with a brief discussion of your methods for judging completion.

2. Geographic Scale. The taxonomic range and geographic scale of the project should constitute a natural and compelling biological focus and need. Biogeographic regions or areas delimited on the basis of other biological criteria are preferable to geopolitical units. Most BS&I projects focus on landscape, regional or continental scales (for example, the southeastern United States, the Orinoco River drainage). Proposals must justify the need for a dedicated collecting effort on the geographic and logistic scale proposed, and must explain why existing collections and inventories are inadequate for developing conservation plans, assessing economic value of natural resources, or addressing particular scientific questions. Proposals that focus on little-explored regions of the world and/or poorly known components of the biota (for example, prokaryotes, protists, fungi, invertebrates) are strongly encouraged, as are surveys of biota of Long Term Ecological Research (LTER) sites, both those within the U.S. and those in the international LTER network (check the LTER website for information, at http://lternet.edu/).

3. Urgency. The need for exploration and collecting may be substantially greater for certain regions than for others, for reasons such as impending habitat destruction, ignorance of critical components of the biota, or rare historical events. If appropriate, proposals should indicate why an immediate and intensive collecting effort is required. Justifications involving endangered habitats, threatened sites, or disappearing resources must make specific reference to the planned collection sites and to the sampling strategy, not simply to the broad region.

4. Conceptual Issues. All BS&I projects should lead to better description and documentation of the biological diversity of particular areas. Lack of knowledge about the taxa and region, however, cannot be the sole justification for a proposal. In the context of a highly competitive merit review, BS&I proposals must make a case for substantial impact on scientific understanding of biodiversity. The proposal should discuss how the collections, species inventories, or other products will facilitate ongoing or future research in such fields, for example, as phylogenetics, ecology, biogeography, coevolution, paleoclimatology, or natural resource management. Discussion of these conceptual links should be specific to the taxa and regions under study, and may include plans for revisionary or monographic work, biogeographic analyses, tests of hypotheses of evolutionary or ecological dynamics, or substantive efforts to enhance biological conservation status in the region.

5. Management Plan. The taxonomic complexity and spatial scale of most BS&I projects are likely to require cooperative work by several specialists, whether under the leadership of a single Principal Investigator or a team; explicit management plans are required, with time and place scheduling, delineation of tasks and responsibilities, and agendas for products at regular intervals during the course of the project. Management plans must address the following:
-- strategy, protocols, and timetable for collection, preparation, documentation, and distribution of all specimens, cultures, stocks or other material samples acquired during the study, with attention to long-term preservation and curation of the collections. Investigators are strongly encouraged to make use of appropriate Global Positioning System (GPS) technology to record locality data. Costs of specimen preparation and storage are eligible items for support; letters from curators of the relevant repositories may be included in the FastLane section on Supplementary Documentation.
-- development of databases of information associated with the collections, including description of hardware and software components, the data model and elements of the database(s), quality-control of data entry, capacity for expansion, and Internet-accessibility including networking protocols and integration with other electronic information resources. Maintenance of the databases, like maintenance of the collections, will be a consideration in proposal review; letters of support from Information Technology managers may be included in the FastLane section on Supplementary Documentation.
-- permits or other required authorizations for the collecting activities, and logistics of cooperative work, in particular with host country scientists if conducted abroad. Prospective investigators wishing to establish collaborations with foreign scientists should review the guidance and opportunities provided through the Division of International Programs (check the

NSF website at http://www.nsf.gov/sbe/int/). BS&I projects are expected to foster international cooperation, including the sharing of data across international boundaries while at the same time assuring that specimens collected today will be available for study by researchers (of any nationality) now and in the future. Projects in the U.S. are expected to adhere to the regulations of the U.S. Fish and Wildlife Service, Forest Service, Bureau of Land Management, National Park Service, or other responsible government agencies. It is expected that the rights of private landowners will be respected at all times. Collecting permits or other authorization documents in hand should be submitted through the FastLane section on Supplementary Documentation.
-- training and other educational opportunities; these should be integrated in the conduct of the survey or inventory wherever feasible, with student partners sharing conceptually and logistically to the fullest extent possible. BS&I grants are eligible for supplementation through the Research Experiences for Undergraduates (REU) program (see program announcement NSF 00-107, available on the NSF website at http://www.nsf.gov/cgi-bin/getpub?nsf00107) and the Research Opportunity Awards (ROA) program, which supports small-college faculty in research projects associated with the primary grant [see program announcement for Research in Undergraduate Institutions (RUI), NSF 00-144, available on the NSF website at http://www.nsf.gov/pubs/2000/nsf00144/nsf00144.htm]. ROA supplements and other supplements could be used to add taxonomic expertise during the course of the project as collections accumulate.

Instructions to Investigators Considering Long-Term, Large-Scale Inventories:

Projects to collect, describe, and catalogue a substantial portion of the biota of a geographic region of continental scale, usually involving thousands of species, will typically require teams of investigators and entail complex logistics. Leaders of such long-term (10-20 years), large-scale projects should plan for a series of 5-year awards, anticipating one or more merit-reviewed renewal applications. Investigators are strongly encouraged to consult in advance of proposal submission with the BS&I Program Director concerning options for support of such long-term projects. With prior written approval from the BS&I Program Director, an additional five pages of text may be authorized in the Supplementary Documentation section of the FastLane submission, in which the following additional topics are addressed:
-- scope of the overall project and justification for the long-term duration of the enterprise;
-- management plan for the overall duration of the project, with milestones for assessing yearly productivity and progress toward the final goal;
-- team of experts who will identify species through the duration of the project, or recruitment plans for the taxonomic expertise likely to be required;
-- ability to process the large numbers of samples collected, including curatorial processing and vouchering, with estimates of when collections will be made available to other workers;
-- coordination with other survey or inventory projects in the same geographic area;
-- anticipated products of the overall project including publications, catalogues, and databases beyond those expected of all BS&I awards (collections and Internet-accessible databases of information).

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to submit proposals under this program announcement/solicitation. In particular, institutions with personnel and interests in the broad field of biodiversity study such as academic institutions, natural history museums, marine and freshwater science institutes, field stations, and botanical gardens should consider research opportunities supportable through the BS&I program. Where appropriate, collaborating scientists in foreign countries can be accommodated through consultant or subaward mechanisms administered by the submitting U.S. institution. The same mechanisms may be used to add experts from other institutions to the project team, on a short-term basis or otherwise, as needs arise during the collection and inventory process.

IV. AWARD INFORMATION

Based on recent fiscal year experience, the Program anticipates making 20-25 awards, as standard or continuing grants, for a total of $5 million, subject to the availability of funds. Check the NSF website (at www.nsf.gov) through the Biology homepages for listings of awards over the last several fiscal years in the Biotic Surveys and Inventories program, for guidance on the range and scope of projects supported (www.nsf.gov/bio/deb/debsysbio.htm#biosi).

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: http://www.nsf.gov/cgi-bin/getpub?gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

Proposals should address the five topics described in this announcement's Program Description. In addition, attention is directed to the following considerations, which may require discussion and documentation.

- Surveys and Inventories in the oceans and U.S. Great Lakes: Proposals to survey marine biodiversity that require the scheduling of NSF-UNOLS ship time must include a completed NSF-UNOLS Request Form (NSF Form 831). The UNOLS form may be obtained from the NSF Division of Ocean Sciences Ship Operations Program or directly from the UNOLS website (at

- http://sio.ucsd.edu/supp_groups/shipsked/forms/NSFform.html). Mail the completed UNOLS Request Form directly to the BS&I Program Director (NSF-Room 635, 4201 Wilson Blvd., Arlington, VA 22230). If the project requires time aboard non-UNOLS vessels, the proposal budget must reflect the direct cost of ship time. Use of UNOLS or other ship time also requires that permits to enter sovereign waters, in compliance with international laws of the sea, be obtained with the assistance of the U.S. Department of State if the researchers plan to collect specimens in any nation's sovereign waters. The Ship Operations Program of the NSF can assist in these negotiations. Contact information can be found on the NSF website for the Directorate for Geosciences, Division of Ocean Sciences at "http://www.geo.nsf.gov/oce.

- Surveys and Inventories in foreign countries: For surveys in countries other than the United States, include in the proposal a description of established collaborations with scientists and students from the host country, and how these individuals will be involved in the project, as well as the arrangements for the in-country housing of specimens and data. Arrangements to allocate specimens between host country institution(s) and U.S. institutions may be made, but type specimens and quality representative specimens should remain in the host country. Prior to an award, PIs must document that they have obtained necessary research agreements and all legally required collecting, import, and export permits. These documents include those needed not only to remove specimens from the field, but also those required to export or import them across national boundaries, including compliance with CITES regulations. Provide collecting-permit documentation in hand at time of submission in the Supplementary Documentation section of the FastLane submission.

- Surveys and Inventories in Antarctica or Greenland: Proposals that involve field work in Antarctica must include information about the logistical and operational requisites of the proposed research, and any environmental impacts. Instructions on proposal preparation for research in Antarctica are provided in the Program Announcement and Proposal Guide for the Antarctic Program of the Office of Polar Programs (OPP), currently NSF 99-93, which can be found on the NSF Online Documents System at http://www.nsf.gov. Obtain information on working in Antarctica from the OPP prior to preparation of a proposal. All research projects in Greenland must be approved in advance by the Government of Denmark. Applications for projects in which U.S. citizens and U.S. nationals are involved in any way (logistical, operational and/or financial support) shall be submitted to the Danish Government through diplomatic channels (i.e., through the U.S. Department of State and the American Embassy, Copenhagen) to the Danish Ministry of Foreign Affairs. The Arctic Research Program of OPP can assist in the submission of these applications, and should be contacted for instructions prior to preparation of a proposal.

- Vertebrate Animals: If the proposed research includes the collection of vertebrate animals, the Principal Investigator must respond to the NSF Grant Proposal Guide (NSF 01-2a) section on required documentation for proposals involving vertebrate animals; see the NSF website for the OnLine Documents System at "http://www.nsf.gov.

- Special Information and Supplementary Documentation. Provide information such as letters of collaboration, collecting permits, environmental impact statement and other allowed items as noted in the current issuance of the GPG. Include letters of support and other materials (such as the vertebrate animal care certificate, if applicable) via the FastLane submission by incorporating the documents as PDF files and adding them to the Supplementary Documentation section of FastLane. This information is not counted as part of the 15 page limit of the Project Description.

- BIO Proposal Classification Form (PCF). Complete the BIO PCF as part of the NSF FastLane submission process. The PCF is an on-line coding system that allows the Principal Investigator to characterize the project when submitting a proposal to the Directorate for Biological Sciences. Once a PI begins preparation of the proposal in the NSF FastLane system and selects any program within the Directorate for Biological Sciences as the first or only organizational unit to review the program and has saved the Cover Sheet, then the PCF will be generated and available through the Form Preparation screen. Additional information about the BIO PCF is available in FastLane at "http://www.fastlane.nsf.gov/a1/BioInstr.htm.

- Color Images. For cost and technical reasons, the Foundation cannot, at this time, reproduce proposals containing color. Therefore, PIs generally should not rely on colorized objects to describe their projects. PIs who must include in the Project Description very high resolution graphics or other graphics where exact color representations are required for proper interpretation by the reviewer, must submit 12 paper copies of the entire proposal (including a paper copy of page 1 of the Cover Sheet) for use in the review process. This submission is in addition to, not in lieu of, the required electronic submission of the proposal via FastLane. Such proposals must be postmarked (or provide a legible proof of mailing date assigned by the carrier) within five working days following the electronic submission of the proposal, and should be mailed directly to the BS&I Program Director (NSF-Room 635, 4201 Wilson Blvd., Arlington, VA 22230). Unless the proposal contains very high resolution graphics or other graphics where exact color representations are critical to the review of the proposal, proposers should not send paper copies.

Proposers are reminded to identify the program solicitation number (NSF 01-150) in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost sharing is not required in proposals submitted under this Program Announcement.

C. Deadline/Target Dates

Proposals must be submitted by the following date(s):

Full Proposals *by 5:00 PM local time*:

November 16, 2001 and first Friday in November annually thereafter

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Announcement through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: http://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call 1-800-673-6188 or e-mail fastlane@nsf.gov.

Submission of Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane website at: http://www.fastlane.nsf.gov.

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgements.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements careful consideration in making funding decisions.

Integration of Research and Education
One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria

Reviewers of BS&I proposals will in particular attend closely to the five topics of Taxonomic Breadth, Geographic Scale, Urgency, Conceptual Issues, and Management Plan described in the section on Project Description in their evaluation. As well, preference will be given to projects with clear, convincing plans for Internet-accessible dissemination in interoperable formats of the results of BS&I supported activity.

A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Mail Review followed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 70 percent of proposals. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at its own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site at http://www.nsf.gov/cgi-bin/getpub?gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Web site at http://www.gpo.gov.

Special Award Conditions
Special specimen collection conditions apply. The awardee shall ensure that award activities carried on both inside and outside the U.S. and its territories and possessions are coordinated, as necessary, with appropriate Government authorities, and that appropriate licenses, permits or approvals are obtained prior to undertaking proposed activities. NSF does not assume responsibility for awardee compliance with the laws and regulations of the country in which the work is to be conducted.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

The Principal Investigator shall provide a summary, in the "Special Requirements" section of each annual and final project report, of all permits, licenses or other necessary approvals associated with specimen collection. The information should include the names of all permits/licenses/necessary approvals, the granting authority, date acquired, duration, and the purpose of the permit/license/approval.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding Biotic Surveys and Inventories should be made to:

- Program Director, for Biotic Surveys and Inventories, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-8481.
- Program Officers, Systematic and Population Biology Cluster, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-8481.

For questions related to the use of FastLane, contact:

- Ms. Elaine Washington, FastLane Liaison, Directorate for Biological Sciences, Division of Environmental Biology, Room 635, telephone: 703-292-7193, e-mail: eputney@nsf.gov.
- Questions can also be directed to, BIOFL@nsf.gov, Directorate for Biological Sciences, Room 695, telephone: 703-292-8406, e-mail: biofl@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF web site at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

Microbial Observatories. The Directorate for Biological Sciences (BIO) has announced a competition to establish research activities by individual investigators or teams of investigators to develop and conduct research at a variety of sites dedicated to studies of microbial communities over time and across environmental gradients. The long-term goal of the Microbial Observatories (MO) activity is to discover previously unknown microbes and to describe and characterize microbial diversity, phylogenetic relationships, interactions, and other novel properties by developing a network of sites, "microbial observatories." The Program Announcement (NSF 00-21) is available on the NSF website at http://www.nsf.gov/pubs/2000/nsf0021/nsf0021.htm.

Partnerships for Enhancing Expertise in Taxonomy (PEET). In partnership with academic institutions, botanical gardens, freshwater and marine institutes, and natural history museums, the National Science Foundation seeks to enhance taxonomic research and help prepare future generations of experts. Through its Special Competition in Systematic Biology, NSF will support competitively reviewed projects that target groups of poorly known organisms for modern monographic research. Projects must train new taxonomists (two per project minimally) and must translate current expertise into electronic databases and other products with broad accessibility to the scientific community. The Program Announcement (NSF 00-140) is available on the NSF website at http://www.nsf.gov/pubs/2000/nsf00140/nsf00140.htm.

Biological Research Collections (BRC). The Biological Research Collections program in the Division of Biological Infrastructure (DBI) provides support for biological collection improvements, collection-related databasing, and research to develop better techniques for curation and collection management. Collections may include natural history specimens, cultures, stocks, or direct artifacts of organisms such as recorded sounds or photographic images. The Program Announcement (NSF 98-126) is available from the NSF website at http://www.nsf.gov/cgi-bin/getpub?nsf98126.

Informal Science Education Supplements. The Informal Science Education Program (ISE) in the Directorate for Education and Human Resources (EHR) funds projects that provide rich and stimulating contexts and experiences for individuals of all ages, interests, and backgrounds to increase their appreciation for and understanding of science. The ISE program will consider requests for up to $50,000 to supplement current research awards from any NSF directorate to assist in the broader dissemination of research results and to promote science literacy for the general public in an out-of-school setting. The supplement can be used for any activity that falls within the definition of an informal science education experience such as media presentations, exhibits, or youth-based activities. For further information, see the ISE supplement announcement at http://www.ehr.nsf.gov/EHR/ESIE/resawrd/Ise-supl.htm.

Research in Undergraduate Institutions (RUI). Faculty members in predominantly undergraduate institutions are eligible to apply for BS&I awards under the RUI program (optionally, they may apply in a regular proposal submission); the main difference between RUI proposals and "regular" NSF proposals is the additional requirement that RUI proposals must include an RUI Impact Statement that describes the expected effects of the proposed research on the research and educational environment of the institution. Single faculty members and groups of collaborating investigators from different RUI institutions are eligible for RUI awards. In addition, faculty members at predominantly undergraduate institutions are eligible for support as visiting scientists with NSF-funded investigators at other institutions through the Research Opportunity Awards (ROA) activity, usually funded as supplements to ongoing NSF research grants. See the RUI (and ROA) program announcement (NSF 00-144) at http://www.nsf.gov/pubs/2000/nsf00144/nsf00144.htm.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

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